

**Utilization of LabVIEW in the Thermal/Vacuum Data Acquisition System for the Environmental Test Laboratory at the Jet Propulsion Laboratory (JPL)**

by  
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**Category:**  
**Production Test**

**Products Used:**  
**LabVIEW**

**The Challenge:** Create a Data Acquisition System to support multiple, simultaneous, thermal/vacuum tests of spacecraft and spacecraft components occurring twenty-four hours a day / seven days a week.

**The Solution:** Create a Client-Server based system that would allow discrete tests to be configured and run from client workstations while obtaining data from a host server.

**Abstract:**

A Data Acquisition System was developed to support multiple thermal/vacuum chambers in the Environmental Test Laboratory at JPL. The architecture is such that a host server running Windows NT Server supports the actual hardware interfaces to up to 1000 channels of thermocouple, pressure, voltage, or current readings from the chambers, and then acts as a data server, from which client workstations can select those channels relevant to a particular test and generate real-time data trending and data display. Each individual test generates its own archive files. An additional workstation also acts to support control temperature conditions with auxiliary spacecraft heaters, while another can act as a webserver to allow external display of a test.